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death of Professor W. B. Rogers the office of president is now vacant. The candidates for the position most spoken of, are Professor J. D. Dana, Professor F. A. P. Barnard and Professor James Hall.

— The numbers of the *AMERICAN NATURALIST* for 1882 were issued on the following dates: January, Dec. 30, 1881; February, January 25, 1882; March, Feb. 24, 1882; April, March, 22, 1882; May, April 24, 1882; June, May 20, 1882; July, June 22, 1882; August, July 28, 1882; September, Aug. 24, 1882; October, Sept. 28, 1882; November, Oct. 28, 1882; December, Dec. 2, 1882.

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RECENT LITERATURE.

A NEW EDITION OF SACHS' BOTANY.¹ It is now more than seven years since the English-speaking and reading botanists were laid under great obligations to Macmillan & Co., for bringing out the translation of the third edition of Sachs' *Lehrbuch*, made by Bennett and Dyer. During this period it is safe to say that no single book on morphological and physiological botany has been more studied and consulted by advanced students, and it is not too much to affirm that few books have ever exerted a more beneficial effect upon a science, than it has in England and America. We have now a new English edition of this important work, based upon the fourth German edition of the *Lehrbuch*, but with many additions, corrections and modifications by Dr. Vines, who, for some years has been well known as a careful student and investigator.

It would be impossible within the limits of an ordinary review to notice the peculiarities of the new edition, containing as it does over one hundred pages more matter than the old one. New paragraphs and sections are common throughout the volume, those by Dr. Vines being generally distinguished by being enclosed in brackets. The chapter on *Thallophytes*, although no longer novel, will still be of interest on account of the new notes which occur here and there in the body of the book, and especially in the appendix. We note with pleasure the remark [Appendix, p. 955], that as the nuclei of the coalescing *myxoamoebæ* remain distinct, "the plasmodium can no longer be regarded as the equivalent of a zygospore, and the position of the *Myxomycetes* among the *Zygomycetes* is untenable." This relegates the *Myxomycetes* to the *Protophytes*, where they were first placed by Fischer, and subsequently by us in our "*Botany*."²

¹ *Text-Book of Botany, Morphological and Physiological*. By JULIUS SACHS, Professor of Botany in the University of Wurzburg. Edited, with an Appendix, by SIDNEY H. VINES, M. A., D. Sc., F. L. S., Fellow and Lecturer of Christ College, Cambridge. Second Edition. Clarendon Press, Oxford, 1882. New York: Macmillan & Co.

² *Botany for High Schools and Colleges*, New York, 1880.

The proposition is made [Appendix, p. 956], to unite the Zygo-sporeæ and the Oosporeæ, because of the apparent extension of the Fucoideæ and Siphonææ into these two groups. Another suggestive paragraph on p. 956, gives a short account of DeBary's views respecting the affinities of the groups of the higher Fungi, as expressed in his *Beiträge* (No. 4, 1881). After giving other apparent relationship, it is stated that "the Uredineæ form one of the more highly developed groups of the Ascomycetous series," exactly the position which we have assigned them. (Botany, p. 310, *et seq.*)

The mechanical execution of the volume is similar to that of the first edition, there being the same clear type, and excellently printed figures. Of the latter there are thirty-one more than in the previous edition. To say that there are no errors or inconsistencies of translation or editing, would be to claim a perfection impossible in so large a volume. The work has been so well done that every botanist in this country may well thank the editor for his labor. However, a few things might have been avoided; for example, on p. 62, the term "metabolism" is used instead of "metastasis," and it is there stated that it "will be adopted in the following pages," but upon turning to page 703, one finds "Assimilation and Metastasis" as in the old edition. There is, moreover, a great difficulty in distinguishing between the foot-notes added by the editors of the first and second editions. These, however, are but small blemishes in a great and valuable work.—*C. E. B.*

DISPOSITION OF THE CERVICAL VERTEBRÆ OF CHELONIANS.¹—M. Vaillant has here given to the world the results of his studies of the cervical vertebræ of nearly fifty species of Chelonians, including *Emys ornata*, *Testudo sulcata*, *Cinosternum pennsylvanicum*, *Thalassochelys caretta*, *Chelodina longicollis*, *Sternotherus castaneus*, and *Trionyx javanicus*, and thus ranging through all the principal groups of the order.

This portion of the skeleton has heretofore been but little studied, and our author reviews all previous notices of it in the most thorough manner. The variations in structure are greater than would be expected in so homogeneous an order, yet are correlated with the habits of the various species, dependant in all cases upon their mobile neck for the power of seizing their food. Notwithstanding this diversity, M. Vaillant states that the eight cervical vertebræ can always be readily distinguished from those of other parts of the vertebral column.

The greater portion of the article is taken up by technical description and comparison of these bones in the various species examined, but a resume, with a diagrammatic tableau, brings

¹ *Memoirs sur la Disposition des Vertebres Cervicales chez les Chelonians.* Par M. LEON VAILLANT. (Présenté à l'Académie des Sciences le 15 Nov. 1880, *Annales Sci. Nat. Zool.*, Art. No. 7.)